

**What is claimed is:**

1           1. A method for selecting a chrominance portion of a pixel to be watermarked,  
2           said selecting step employing a perception-based table that indicates for each of at least a  
3           plurality of possible pixels in a colorspace which, if any, of the chrominance portions  
4           should be selected for watermarking.

1           2. The invention as defined in claim 1 wherein said perception-based table  
2           indicates for each entry therein whether to watermark only a first chrominance portion or  
3           only a second chrominance portion.

1           3. The invention as defined in claim 1 wherein said perception-based table  
2           indicates for each entry therein whether to watermark a first chrominance portion, a  
3           second chrominance portion, or not to watermark at all.

1           4. The invention as defined in claim 1 wherein said perception-based table is in  
2           computer readable form.

1           5. The invention as defined in claim 1 wherein said perception-based table  
2           divides an entire colorspace into regions, at least one of said possible pixels within each  
3           said region, and said perception-based table supplies an indication for said pixel based on  
4           which region of said perception-based table said pixel falls.

1           6. The invention as defined in claim 1 wherein said pixel is part of a digital video  
2           bitstream represented in YUV format and wherein said perception-based table indicates  
3           for any pixel to watermark U or V as a function of the Y, U, and V values of said pixel.

1           7. The invention as defined in claim 1 wherein said pixel is part of a digital video  
2           bitstream represented in YUV format, and wherein said selecting step is performed using  
3           only said YUV formatted digital bitstream directly and no other version of said digital  
4           bitstream formatted in any other format.

1           8. The invention as defined in claim 1 wherein said pixel is part of a digital video  
2 bitstream represented using a first colorspace type representation, and wherein, said  
3 selecting step is performed using only a digital bitstream formatted in said first colorspace  
4 type representation directly and other colorspace type representation.

1           9. The invention as defined in claim 1 wherein said pixel is a decimated pixel  
2 derived from an original digital video bitstream.

1           10. The invention as defined in claim 1 wherein said pixel is a decimated pixel  
2 derived from an original digital video bitstream represented in YUV format,

1           11. The invention as defined in claim 1 wherein said pixel is a quantized pixel  
2 derived from an original digital video bitstream.

1           12. The invention as defined in claim 1 wherein said pixel is a quantized pixel  
2 derived from an original digital video bitstream represented in YUV format,

1           13. The invention as defined in claim 1 wherein said perception-based table  
2 contains information to indicate which, if any, of the chrominance portions should be  
3 selected for watermarking for each pixel value of the entirety of said colorspace.

1           14. The invention as defined in claim 1 wherein said perception-based table  
2 contains information to indicate which, if any, of the chrominance portions should be  
3 selected for watermarking for each possible pixel of only a prescribed portion of said  
4 colorspace, and wherein said selecting step further comprises the step of determining that  
5 a pixel is within said prescribed portion of said colorspace for which said perception-  
6 based table contains information.

1           15. The invention as defined in claim 1 wherein said perception-based table  
2 contains information to indicate which, if any, of the chrominance portions should be  
3 selected for watermarking for each possible pixel of only a portion of said colorspace, and  
4 wherein said method further comprises the steps of:

5           determining that a pixel is not within said portion of said colorspace for which  
6 said perception-based table contains information; and

7           determining which, if any, of the chrominance portions should be selected for  
8 watermarking for said pixel, as a computed function of at least one value of said pixel.

1           16. The invention as defined in claim 1 wherein a chrominance portion of said  
2 pixel is watermarked by having its value changed to represent the conveyance of  
3 additional data other than the original value of said chrominance portion.

1           17. Apparatus for supplying an indication as to which chrominance portion of a  
2 pixel of a video signal, if any, is better suited to be altered so as to carry additional  
3 watermark information, said apparatus comprising a perception-based table in a computer  
4 readable media for at least a portion of the possible pixel colorspace, said table specifying  
5 for pixels that are within said portion of said colorspace the chrominance portion to be  
6 indicated by said apparatus.

1           18. The invention as defined in claim 17 further comprising a computation unit  
2 for indicating for a pixel that is not within said portion of said colorspace which  
3 chrominance portion is to be indicated based on at least a value of one of said  
4 chrominance portions of said pixel.

1           19. The invention as defined in claim 17 wherein said chrominance portion is  
2 better suited to be altered when altering said chrominance portion will produce less, if  
3 any, visible artifact than altering any other chrominance portion of said pixel.

1           20. A method for selecting a chrominance portion of a pixel to be watermarked,  
2 said selecting step employing a perception-based table that indicates for each of at least a  
3 plurality of possible pixels in a colorspace which, if any, of the chrominance portions  
4 most likely had watermark data added thereto.

1           21. Apparatus for selecting a chrominance portion of a pixel to be watermarked,  
2 said apparatus comprising a perception-based table in a computer readable medium that  
3 indicates for each of at least a plurality of possible pixels in at least a portion of a  
4 colorspace which, if any, of the chrominance portions would be least likely to introduce a  
5 visible artifact should watermark data be added thereto.

1           22. Apparatus for selecting a chrominance portion of a pixel to be watermarked,  
2 said apparatus comprising:  
3           a computer readable store containing a perception-based table that indicates for  
4 each of at least a plurality of possible pixels in at least a portion of a colorspace which, if  
5 any, of the chrominance portions should be selected for watermarking; and  
6           means for accessing said store to determine which chrominance portion, if any, to  
7 select, when said pixel is one of said pixels in said portion of said colorspace.

1           23. The invention as defined in claim 22 further comprising means for  
2 computing as a function of a least one value of said pixel which, if any, of the  
3 chrominance portions should be selected for watermarking, said means for computing  
4 operating only when said pixel is not one of said pixels in said portion of said colorspace.

1           24. Apparatus for selecting a chrominance portion of a pixel to be watermarked,  
2 said apparatus comprising:  
3           a computer readable store containing a perception-based table that indicates for  
4 each of at least a plurality of possible pixels in at least a portion of a colorspace which, if  
5 any, of the chrominance portions most likely had watermarking data added thereto; and  
6           means for accessing said store to determine which chrominance portion, if any, to  
7 select, when said pixel is one of said pixels in said portion of said colorspace